Trout Lake Provincial Nature Reserve Interim Management Statement

Ontario
Ministry of Natural Resources

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REGIONAL DIRECTOR'S APPROVAL STATEMENT

This Interim Management Statement will provide interim direction for the management of the Trout Lake Provincial Nature Reserve until a comprehensive Park Management Plan is prepared.

This statement will provide the basis for the subsequent preparation of the Park Management Plan.

I am pleased to approve this Interim Management Statement for the Trout Lake Provincial Nature Reserve.

D.R. Johnston
Regional Director
Northwestern Region

INTRODUCTION

The purpose of this Interim Management Statement is to identify:

i) park values which are to be protected;

ii) resource management prescriptions necessary to protect these values; and

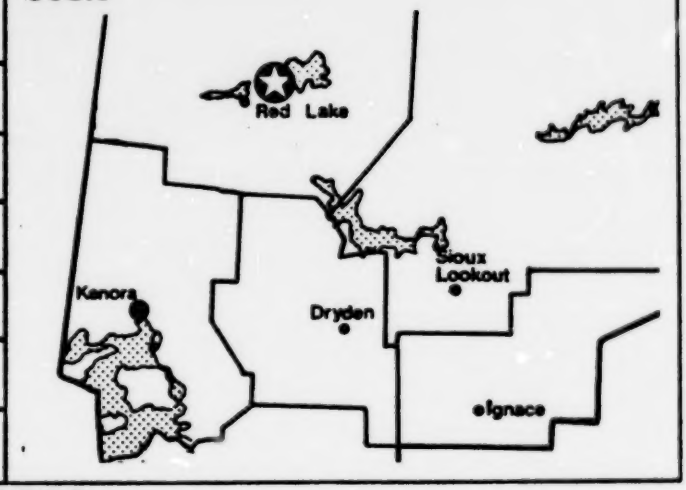
iii) restrictions on use of natural resources within the park.

This Interim Management Statement is not intended to replace a Park Management Plan. Rather it is intended to guide the use of natural resources and related activities within the park until such a time as a Park Management Plan is prepared.

The guidelines that have been developed are based on information contained in the Backgrounder - District Land Use Guidelines .

BACKGROUND INFORMATION

NAME: TROUT LAKE	**REGIONAL SETTING MAP**
PROPOSED CLASS: Nature Reserve	
M.N.R. DISTRICT: Red Lake	
M.N.R. REGION: Northwestern	
TOTAL AREA(ha): 7500 **LAND:** **WATER:**	
SITE REGION: Lake St. Joseph	
SITE DISTRICT: 3S-1	
DATE In REGULATION:	



TARGETS

1 LIFE SCIENCE REPRESENTATION

site type/landscape unit	species/communities
L.U. 18 - Lac Seul Moraine - Trout Lake Portion	Central Boreal Forest Region and associated vegetation complexes

2 EARTH SCIENCE REPRESENTATION

geological theme	feature
Timiskaming Interstadial	Lac Seul Moraine Lake Agassiz - raised strandlines

3 CULTURAL RESOURCE REPRESENTATION

theme	theme segment
Unknown	Unknown

4 RECREATION OPPORTUNITIES

day use	car camping	wilderness/back country
N/A	N/A	N/A

INVENTORIES

level \ type	earth science	life science	cultural	recreational	other
reconnaissance completion date	Feb. 1979			N/A	
detailed completion date					
required?	Yes	Yes			

DATE _____

MANAGEMENT GUIDELINES

I Land Tenure

There is one Land Use Permit in the park issued to Booi's Wilderness Lodge for the purposes of a waste disposal site.

Guideline

The L.U.P. for the waste disposal site will be cancelled and the site rehabilitated to its original condition.

II Land Acquisition/Disposition

There are no patented lands within the park area at this time. The disposition of land within the park will not occur pending the completion of the park management plan.

III Existing/Proposal Development

There is no existing development within the park area and none will be permitted pending the completion of the park management plan.

IV Recreation Activities

A small amount of sport hunting and camping presently occur along the shoreline of the park.

Guideline

Sport hunting will not be permitted within the park area once it is brought into regulation under the Provincial Parks Act. Enforcement will be accomplished through communication within park literature and signage along the shoreline of the park.

Camping along the shoreline of Trout Lake within the park area will be permitted to continue. The Trout Lake Provincial Nature Reserve is considered to be a non-operating park and as such, the Crown land camping permit fee will apply.

V Commercial Activities

There are presently portions of two traplines (R1-58 and RL-72) and one trapline cabin located within the park area.

The park lies within the Great Lakes Management Unit and the Red Lake Crown Management Unit.

No other commercial activities presently exist.

Guideline

Trapping will be permitted to continue as a non-conforming use and will be phased-out over time. In the event of a request for a transfer of either of the above two licences, the area contained within the park will be excluded from the reissued licence. The trapline cabin will be removed or dismantled when no longer required and the site rehabilitated to its natural condition.

The portion of the park within the Great Lakes Management Unit is under a Forest Management Agreement. This area has been excluded from the F.M.A. The portion of the park within the Red Lake Crown Managment Unit has been removed from timber harvesting operations.

The above situation will be reflected in all management and operating plans that cover the park area. Once the area is regulated under the Provincial Parks Act, an Order-in-Council will be prepared to formally withdraw the park area from the above licence areas.

No other commercial activities will be permitted pending the completion of the park management plan.

VI Natural Resources

A number of earth science values have been documented for the park as detailed in the attached check sheet. Interim management efforts will be directed towards the protection of these earth science values.

Due to the proximity of the park to licenced forest harvesting areas, all fires within the park will be subject to initial attack and fire suppression efforts. Fire suppression techniques used will have as minimal effect as possible on the park environment. Such means of suppression as bulldozing, helipad locations, fire camps, and water bombing with chemical additives will not be permitted except in critical situations.

VII Research

More complete earth and life science inventories will be necessary prior to the preparation of the park management plan.

Research activities that will enhance our scientific and resource knowledge of the park will be encouraged.

VIII Native Interests

The park lies within the Treaty #3 area. Traditional native uses, including hunting and fishing for personal use, will be permitted to continue within the park area.

IX Cultural Resources

There are no known cultural resources within the park area.

Sources/References

Gray, Stephen L. 1980. Life Science Systems Planning Report West Patricia Land Use Plan.

Harvey, E.T. 1980. Earth Science Systems Planning in the West Patricia Planning Area, Final Report.

Harvey, T., S.L. Gray, B. Thacker 1980. Landscape Units of the West Patricia Land Use Planning Area.

Ontario Ministry of Natural Resources, Backgrounder - District Land Use Guidelines, June 1983.

Source: Backgrounder
District Land Use Guidelines
OMNR, 1983

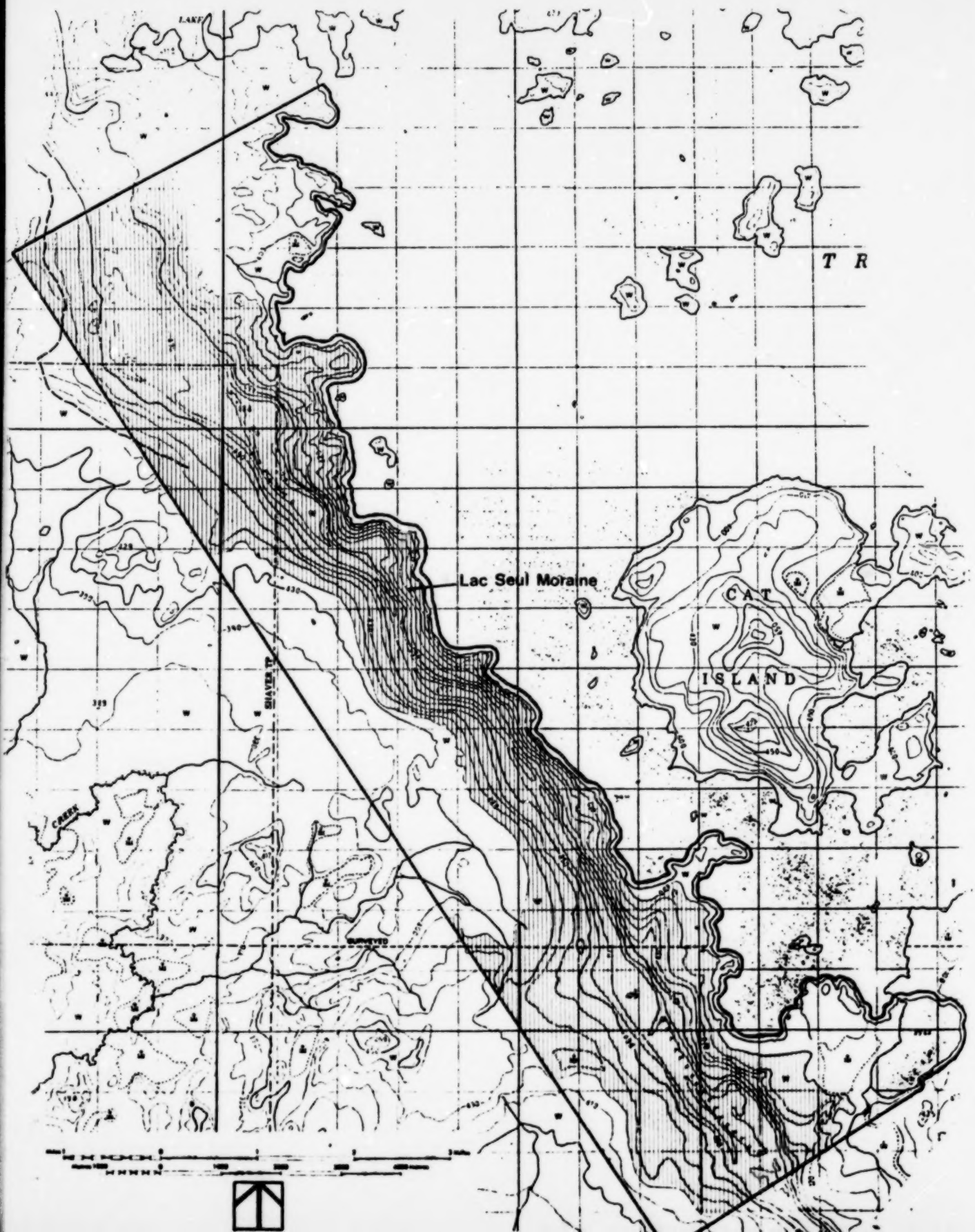
Table IV

RECOMMENDED NATURE RESERVE CANDIDATES

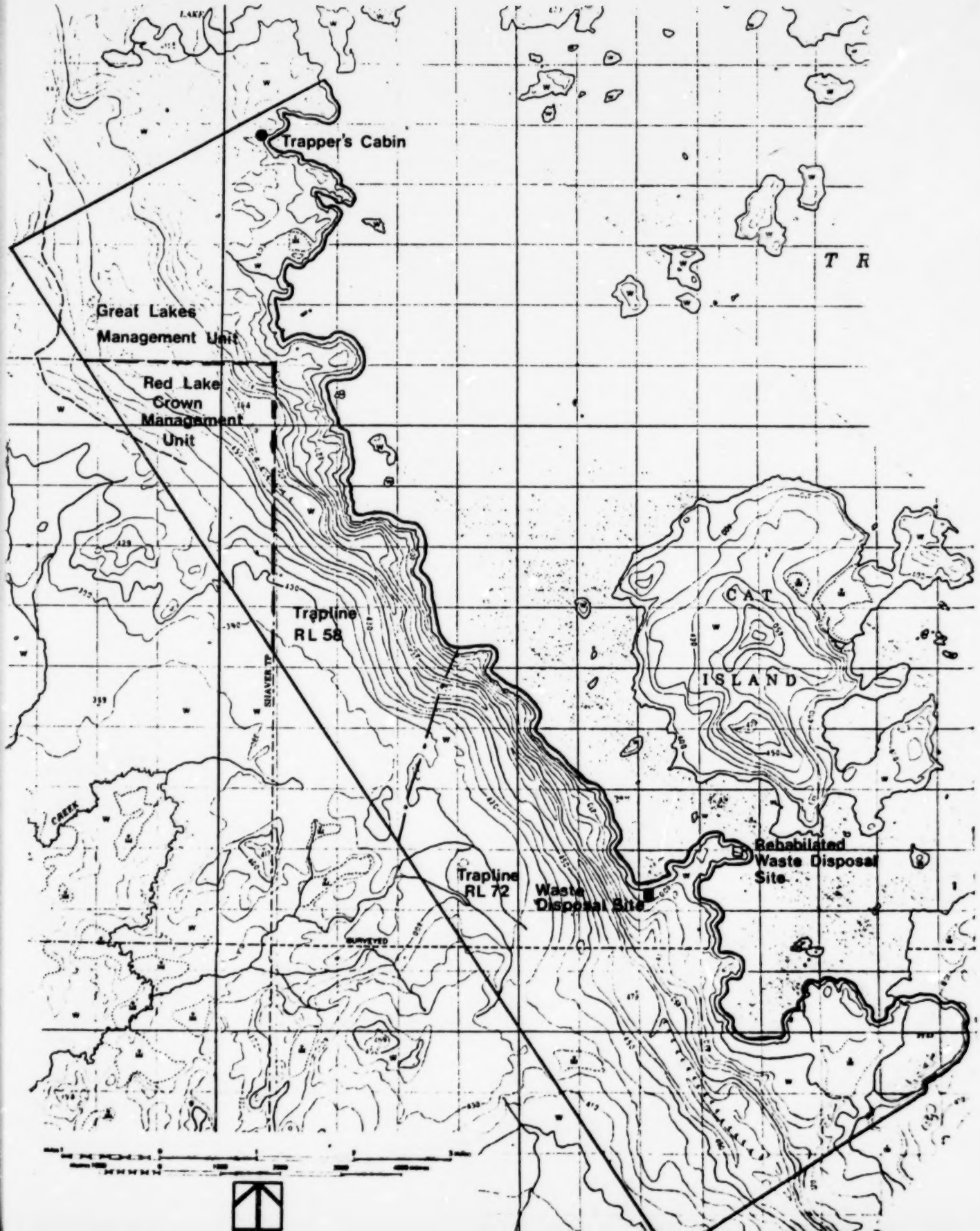
Name	MNR Region	Size (ha)	Uses Recommended to continue prior to and after regulation						
			Mineral Exploration/ Development	Hunting	Trapping	Commercial Tourism	Commercial Fishing	Bait Fishing	Other
1. Trout Lake*	NW	7,850			Phase out				
2. Windigo Point*	NW	380			Phase out				
3. Lola Lake	NW	6,350	Yes	Yes	Yes			Yes	
4. Butler Lake	NW	3,290	Yes	Yes	Yes				
5. Bonheur	NW	720							
6. Minitaki Kames*	NW	4,340			Phase out				
7. Sable Island	NW	1,800		Yes	Yes			Yes	
8. Gameland	NW	2,200	Yes	Yes	Yes			Yes	
9. Nelles Township	NW	800	Yes	Yes	Yes				
10. Blue Township	NW	1,600	Yes	Yes	Yes			Yes	
11. West Bay	NC	1,140			Yes				
12. Windigo Bay	NC	8,300		Yes	Yes				
13. Sedgeman Lake	NC	5,800		Yes	Yes				Wild Rice
14. Edward Island	NC	530	Yes						
15. Kiashk/Gull River	NC	230							
16. White Fish Lake (W)	NC	1,150							
17. White Fish Lake (E)	NC	190	Yes						
18. Thompson Island	NC	170	Yes						
19. Craig's Pit	NC	480	Yes	Yes	Yes			Yes	
20. Matawin River	NC	2,650		Yes	Yes				
21. Pentagruel Creek	NC	2,200			Yes				
22. Kab River	NC	1,970		Yes	Yes				
23. Fraleigh Lake	NC	870		Yes	Yes				
24. Devon Road Mesa	NC	90							
25. Pigeon River Clay Plain	NC	2,870	Yes		Yes				
26. Prairie River Mouth	NC	290	Yes	Yes	Yes			Yes	
27. Gravel River	NC	790	Yes	Yes	Yes			Yes	
28. Arrowhead Peninsula	NC	490							
29. Pie Island Mesa	NC	50							
30. Red Sucker Point	NC	380	Yes	Yes	Yes			Yes	
31. Kame Hill	NC	1							
32. Puff Island	NC	2							

Earth Science Features

Trout Lake Provincial Nature Reserve



Development



EARTH SCIENCE INVENTORY CHECKLIST

NAME	MAP NAME	MAP NUMBER	UTM REFERENCE
Trout Lake Crown Reserve	Little Trout Lake	53N/3	80 70

COUNTY	LAT.	LONG.	ALT. MIN.	ALT. MAX.
District of Kenora	51°15'	94°30'	479 m	392m

TOWNSHIP
Patricia Portion

LOT CONCESSION

AREA
21420 acres ha.

OWNERSHIP
Crown Reserve

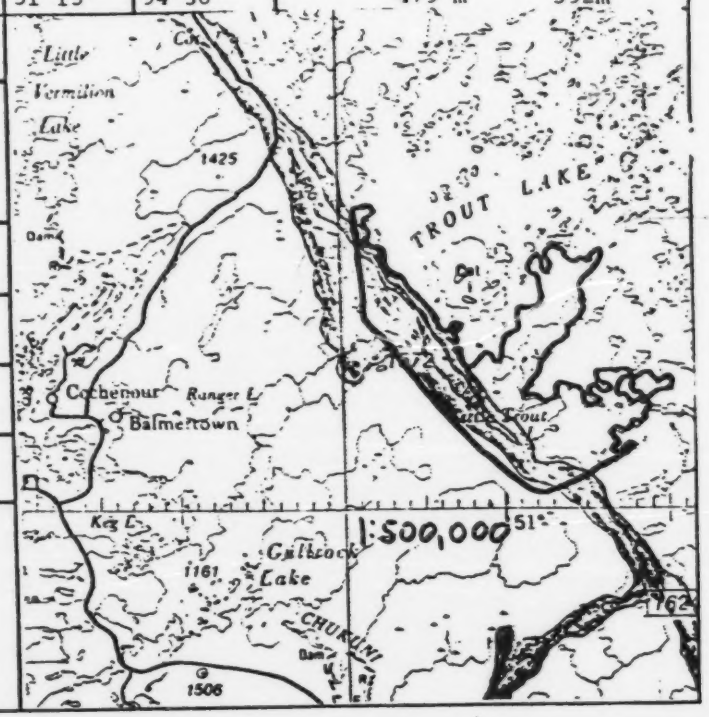
ADMINISTRATION
Northwestern Region

MNR REGION & DISTRICT
Red Lake

CONSERVATION AUTH.

AERIAL PHOTOGRAPHS — BASEMAPS
Federal 1:63,000 scale

YEAR	ROLL	FLIGHT LINE	NUMBERS
152		A15582	11-15
		A13902	2-7
		A14531	117-114
		A13907	68-69



EARTH SCIENCE FEATURES

- minor metasediments (quartz-biotite-hornblende-feldspar paragneiss) on the peninsula between Otter Lake and Trout Lake; elsewhere silicic plutonic rocks, all from the Uchi Volcanic Subprovince
- Timiskaming stadial- Lac Seul moraine, a variety of features and shoreline sequences from middle Lake Agassiz history

SENSITIVITY

- no problems anticipated

SIGNIFICANCE

- poor representation of bedrock features
- excellent representation of Lac Seul Moraine and associated features
- excellent representation of middle Lake Agassiz history

MAJOR REFERENCES

see attached

DATE COMPILED	COMPILER
February 23, 1979	T. Harvey, Box 89, Cochenour

Ontario Ministry of Natural Resources, Division of Parks, Parks Planning Branch, Queen's Park, Toronto, Ontario, M7A 1W3

Physical Features:

Bedrock geology: The Crown Reserve is underlain by rocks of the Canadian Shield, formed at least 2.5 billion years ago during the Archean era (Stockwell, 1964). The Red Lake area forms part of a structural subprovince of the Canadian Shield called the Uchi Volcanic Belt (Riley et al, 1971), which is composed of volcanic sequences intruded by multiphase granitic plutons. The volcanics (basalt to rhyolite were laid down in one or more complex cycles exhibiting a trend in deposition from an early mafic phase to a late felsic phase. Metasediments (arkose, greywacke, chert) are usually at the top of the sequence overlying and intertongued with felsic metavolcanics. These belts of metavolcanics are surrounded by numerous discrete, and largely unmetamorphosed batholiths (Breaks et al, 1978).

A brief report by Breaks (1972) presents a detailed description of the bedrock geology from which the following is summarized. The bedrock map which they prepared is addended to the checksheet. Bedrock outcrop is sparse and largely confined to the shore of Trout Lake. Silicic plutonic rocks underlie most of the reserve but minor outcrops of metasediments of quartz-biotite-hornblende-feldspar paragneiss and amphibolite occur at the end of the peninsula between Cat Island and Otter Lake, so intensely deformed that primary textures and structures have been destroyed. Massive to foliated granodiorite are associated with the paragneiss and are found injected in a lit-par-lit fashion. A late massive pink medium to coarse grained quartz monzonite phase occurs on the mainland opposite Cat Island and just east of Otter Lake. Amphibolite originally thin lenses of quartz-poor greywacke or argillite) bands occurs as rafted xenoliths incorporated into a quartz monzonite intrusive phase on the west shore. A circular aeromagnetic anomaly was also investigated but its origin in unknown because of the Lac Seul moraine is at its thickest point in the area. One postulate is that the anomaly may be result of a magnetite-bearing porphyritic granitic stock.

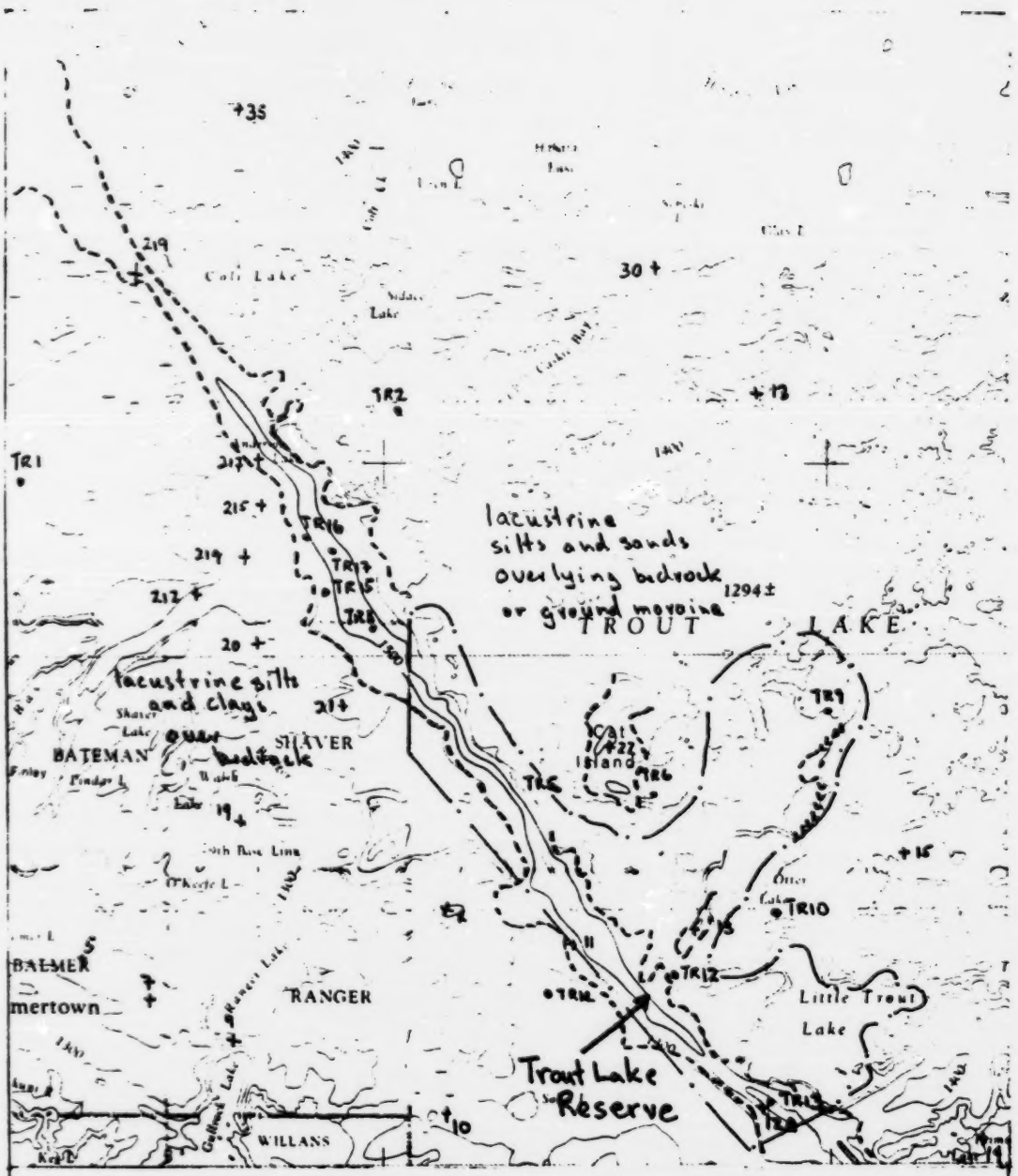
Surficial Geology:

Fifteen sites in the vicinity of the Crown Reserve were examined from July 5 and 6, 1978 by helicopter. Field site descriptions are available with the original checksheet. These compliment an additional twenty stops noted by Ontario Centre for Remote Sensing in their 1977 mapping season. Publication by OCRS of a map of the surficial geology of 52N is imminent. Aerial photo analysis has been used to prepare the attached map (scale 1 inch to 1 mile).

Trout Lake is dammed by a prominent terminal or end moraine deposited by one or more ice advances during gradual recession of the Wisconsin ice sheet between 10,000 and 11,000 years ago (Saarnisto, 1974; Timiscaming Interstadial). The ridge, called the Lac Seul moraine (locally the Trout Lake ridge) is sharp crested for the most part and variably modified by lacustrine action. Evidence for more than one advance can seen in a gravel pit to the north (TR19: 52N/5, 608 780) in which ablation till overlies proglacial deposits. The moraine is largely composed of stratified sand and gravel deposited as outwash but may well be capped by a thin layer of ground moraine which has subsequently been heavily modified and or removed. The upper surface is boulder strewn and predominantly composed of well sorted lacustrine sands.The eastern side is a steep sided face formed in contact with the ice as the glacier deposited sands and gravels towards the west. The western side in contrast is gently sloping and terraced by Lake Agassiz shorelines. Less prominent shorelines notch the eastern side formed by impounded water between the receeding ice front and the moraine. A small esker can be traced across Otter Lake and near its junction with the moraine, the esker surface is hummocky with several small aligned kettles (OCRS site 13). Cat Island contains a lake modified remnant of the moraine (OCRS site 22).

The remainder of the crown reserve is overlain by the lacustrine deposits and wave modified glacial drift. On the poorly drained peninsula between Otter Lake and Trout Lake immature sandy silts were noted thinly covering paragneiss. An OCRS sample (15) indicates that parts of the bedrock drift complex were not so heavily modified east of Little Trout Lake. A winnowed ground moraine surface was observed. Greater thicknesses of silts and clay (both varved and unlaminated) can be found on the west side of the Lac Seul moraine. Generally the grain size becomes finer further west of the moraine where deeper water conditions prevailed and fines upwards stratigraphically, indicative of the increasing distance from the source of sediment as the glacial front receeded eastwards.

The Lac Seul moraine exhibits a variety of beach features (cobble bars and terraces) which were formed by the nearly 1000 yr. life of Lake Agassiz. Several points along the crest of the moraine escaped inundation by Lake Agassiz (higher than 477 metres at 52N/3 799524-TR13 and 52N/3 667703-TR3) (Prest, 1963)although ice blocks probably were part of exposed surface. When the ice block melted flat bottomed depressions (kettles) were formed, filled with thin silt deposits. A spectacular two metre high boulder beach rampart forms a prominent crest along the western side of the moraine at 470 m. Boulders averaging a metre in size at TR3 attest to the strength and duration of Lake Agassiz wave action. Several other strandlines at 420 m, 440 m. and a prominent level at 450 m record brief halts in the gradual retreat of glacial waters. A cuspate foreland was developed between the moraine and a bedrock knob further west at approximately 410-420 m (52N/3 735 545). Prominent terraces are also found on Cat Island at 450 m and 440 m above which the ground appears to be unmodified.



♦ OCRS field site

• 1978 field site

Lac Seul Moraine

—— reserve boundary

TROUT LAKE CROWN RESERVE

scale 1:250,000

Zoltai (1967) attempted a correlation of shorelines and eastern outlets using elevations from the Lac Seul moraine. Just north of the junction, between the Hartman and Lac Seul moraine (525/14 869 445) a shoreline was recorded at 1515 ft. Prest (1963) indicated that the limit of wave action further north along the moraine was 1550 ft. or 225 ft above the level of Trout Lake (at 52N/3 667 703). However both of these elevations appear to be in error because the 1:250,000 maps from which they were estimated are inaccurate by nearly 100 ft. Recently published 1:50,000 topographic maps allow the correction of these sites to 480 m (1575 ft) for Zoltai's site and 477 m (1565 ft) for Prest's site. Zoltai (1967) showed that the calculated elevations fell upon the Campbell waterplane but when corrected they fall below the water plane. Rough calculations based upon Elson's (1967) water planes suggests that the Lac Seul moraine may have been formed at the lower Campbell stage slightly later than previously dated. Other shorelines are similarly tentatively correlated to McCauleyville (470 metres) through Gladstone (410 metres).

Sensitivity

Fine sands which exist on some parts of the moraine can be mobilized if exposed to the wind.However open ground as a result of a fire fifteen years ago have not suffered deflation. The area then seems to have the resiliency to withstand usual park use. The peninsula between Otter Lakes and Trout Lake is poorly drained and may present difficulties if development is attempted.

Significance and Recommendations:

Bedrock outcrop is so minor that Uchi Belt metasediments are poorly represented. Other bedrock units are adequately represented further west in Woodland Caribou Park where their abundant exposure provides the opportunity for study and significance.

The Lac Seul moraine, an essential component of the Timiscaming Interstadial, is not well represented in the Provincial Parks System in Northwestern Ontario (Kor, 1979). Several important aspects are well displayed- ice contact face; a small esker system entering the moraine; sloping western side from deposition of outwash in Lake Agassiz and several unmodified kettles along the crest. A wide variety of beach forms are present on the Lac Seul moraine although beach features are generally well represented in Provincial Parks. Boulder ramparts are an uncommon feature however. The shorelines were formed by middle stages of Lake Agassiz from lower Campbell to Gladstone (?). This part of the Lac Seul moraine is certainly one of the best locations for representing shoreline sequences because the ridge has a high relief and underwent a higher rate of uplift than at more southerly locations. The sequence therefore provides an excellent opportunity for the study and interpretation of glacial lake shorelines.

The Trout Lake Crown Reserve should be designated a Provincial Park because of the contribution that it can make to the Earth Science component of the Provincial Parks Protection Objective. Classification as a Natural Environment Park would also allow the development of recreation facilities. The location of the reserve is excellent since adeuqate quantities of aggregate would still be available to service the long term needs of Red Lake from the more accessible portions of the moraine along the Nungesser Road, Representation of the Lac Seul moraine would be further enhanced by expanding the boundary westwards (no more than 4 km) to provide a more complete representation of fine grained sediments and fully protect the cuspate foreland on the flank. It is also suggested that if camping facilities are considered, the west side of Little Trout Lake and Otter Lake would be most appropriate, judging by this preliminary analysis. The area could be serviced along the shore of Little Trout Lake from pre-existing logging roads to the south thereby preventing disturbance of the Lac Seul moraine.

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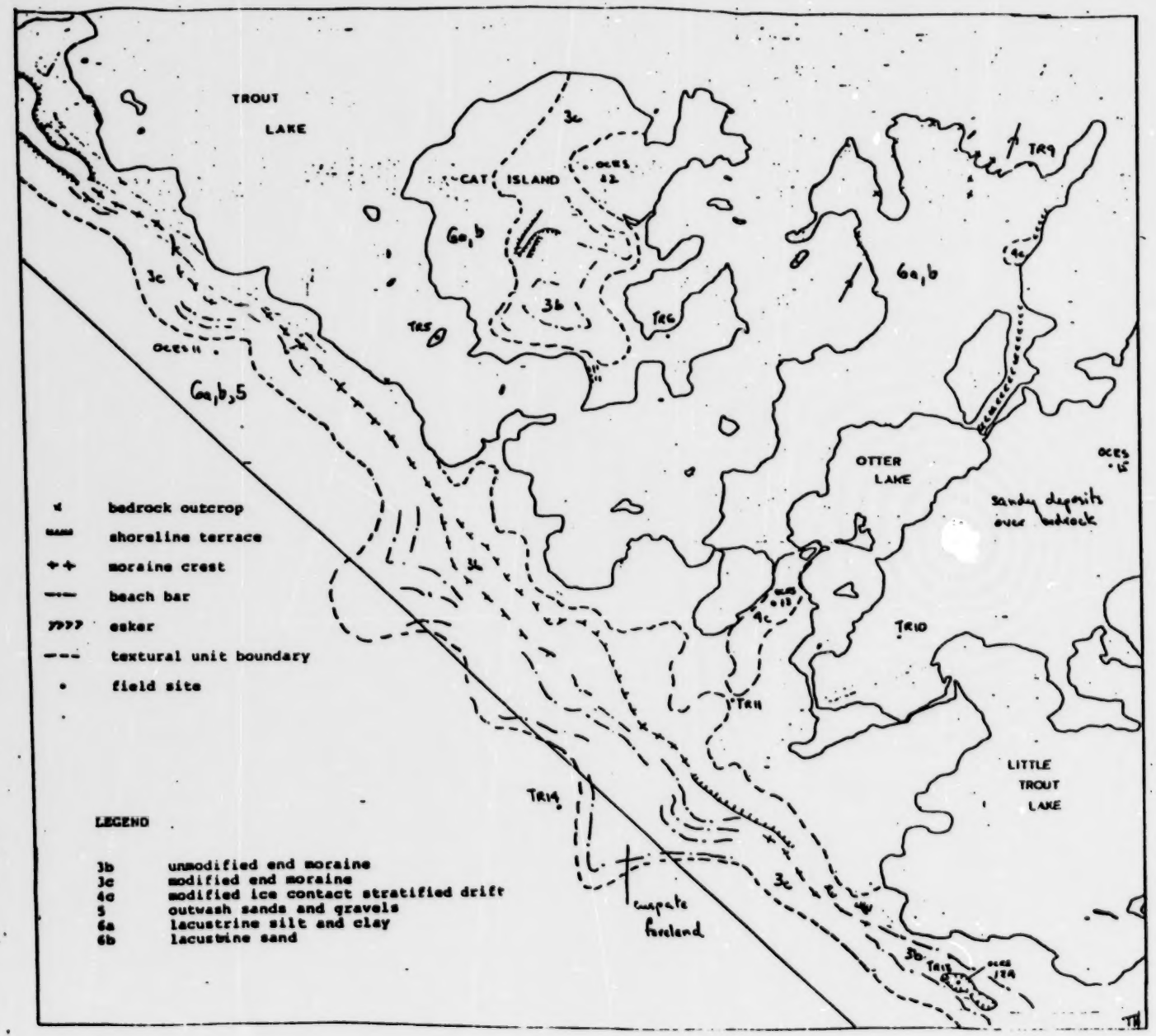
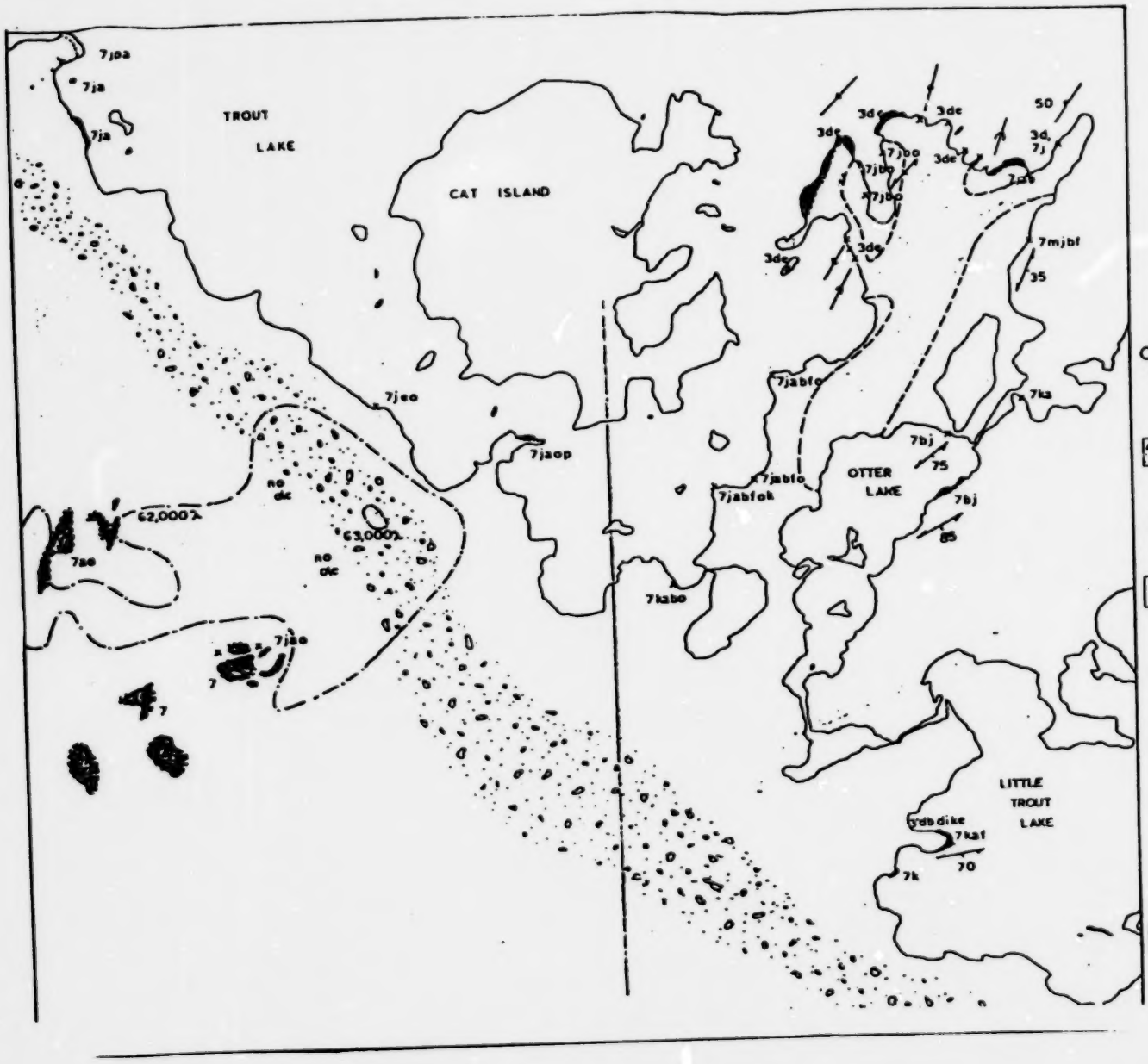
TROUT LAKE CROWN RESERVE





TROUT LAKE

N

LEGEND

CENOZOIC

QUATERNARY

Recent LAKE STREAM and SWAMP DEPOSITS

Pleistocene SAND SILT GRAVEL COBBLES & BOULDERS (TERMINAL MORAINE)

UNCONFORMITY

EARLY PRECAMBRIAN

Felsic to Intermediate Plutonic Rocks

7	7	UNSUBDIVIDED
	7a	MASSIVE
	7b	FOLIATED
	7c	GNEISSIC
	7d	EQUIGRANULAR
	7e	PORPHYRITIC
	7f	XENOLITHIC
	7g	HORNBL > 66% C.I.
	7h	BIOTITE = HORNBLENDE
	7i	BIOTITE > 66% C.I.
	7j	QTZ MONZONITE - GRANITE
	7k	GRANODIORITE
	7l	TRONDHJEMITE - QTZ D OR
	7m	DIORITE
	7n	SYENITE - MONZONITE
	7o	PINK PEGMATITE
	7p	APLITE & ALASKITE DYKES

Metasediments

3	3a	GWKE, ARGILLITE, SLATE
	3b	QTZITE, ARKOSE
	3c	CONGLOMERATE
	3d	BIO QTZ FELD PORPHYRITIC GNEISS